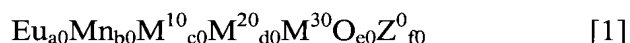


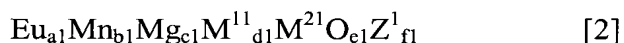
IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (Currently Amended): A phosphor comprising a crystal phase having any one chemical composition of the following formulas [1] to [3]:

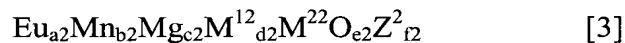


wherein M^{10} is a divalent element containing 85 mol% or more of at least one element selected from the group consisting of Ba, Ca and Sr, in which the ratio (molar ratio) of Ca to the sum of Ba and Ca is from 0.1 to 0.9; M^{20} represents at least one element selected from the group consisting of a monovalent, trivalent and pentavalent elements; M^{30} represents a group of tetravalent elements containing Si and Ge in a total amount of 90 mol% or more; Z^0 is at least one element selected from the group consisting of a minus monovalent and minus divalent elements, H and N; and a_0 is a number satisfying $0.001 \leq a_0 \leq 0.6$, b_0 is a number satisfying $0 < b_0 \leq 0.7$, c_0 and d_0 are numbers satisfying $0 \leq d_0/(c_0 + d_0) \leq 0.2$, a_0 , b_0 , c_0 and d_0 are numbers satisfying $1.8 \leq (a_0 + b_0 + c_0 + d_0) \leq 2.2$, and e_0 and f_0 are numbers satisfying $0 \leq f_0/(e_0 + f_0) \leq 0.035$ and $3.6 \leq (e_0 + f_0) \leq 4.4$:



wherein M^{11} represents at least one element selected from the group consisting of a monovalent element, a divalent element except Eu, Mn and Mg, a trivalent element and a pentavalent element, in which the proportion of the divalent element is 80 mol% or more, the proportion of the sum of Ba, Ca and Sr is 40mol% or more, and the ratio (molar ratio) of Ca to the sum of Ba and Ca is from 0.2 to 0.9; M^{21} represents a group of tetravalent elements containing Si and Ge in a total amount of 90 mol% or more; Z^1 is at least one element

selected from the group consisting of a minus monovalent and minus divalent elements, H and N; and a₁ is a number satisfying $0.001 \leq a_1 \leq 0.8$, b₁ is a number satisfying $0 < b_1 \leq 0.8$, c₁ and d₁ are numbers satisfying $0 < c_1 / (c_1 + d_1) \leq 0.2$, a₁, b₁, c₁ and d₁ are numbers satisfying $1.8 \leq (a_1 + b_1 + c_1 + d_1) \leq 2.2$, and e₁ and f₁ are numbers satisfying $0 \leq f_1 / (e_1 + f_1) \leq 0.035$ and $3.6 \leq (e_1 + f_1) \leq 4.4$:



wherein M¹² represents at least one element selected from the group consisting of a monovalent element, a divalent element except Eu, Mn and Mg, a trivalent element and a pentavalent element, in which the proportion of the divalent element is 80 mol% or more, the proportion of the sum of Ba, Ca and Sr is 40mol% or more, and the ratio (molar ratio) of Ca to the sum of Ba and Ca is less than 0.2; M²² represents a group of tetravalent elements containing Si and Ge in a total amount of 90 mol% or more; Z² is at least one element selected from the group consisting of a minus monovalent and minus divalent elements, H and N; and a₂ is a number satisfying $0.0003 \leq a_2 \leq 0.8$, b₂ is a number satisfying $0 < b_2 \leq 0.8$, c₂ and d₂ are numbers satisfying $0 < c_2 / (c_2 + d_2) \leq 0.2$ or $0.3 \leq c_2 / (c_2 + d_2) \leq 0.8$, a₂, b₂, c₂ and d₂ are numbers satisfying $1.8 \leq (a_2 + b_2 + c_2 + d_2) \leq 2.2$, and e₂ and f₂ are numbers satisfying $0 \leq f_2 / (e_2 + f_2) \leq 0.035$ and $3.6 \leq (e_2 + f_2) \leq 4.4$, wherein the phosphor emits red or white light.

Claim 2 (Currently Amended): The phosphor according to claim 1 comprising a crystal phase having a chemical composition of said formula [1], wherein M¹⁰ is a divalent element containing 85 mol% or more of at least one element selected from the group consisting of Ba, Ca and Sr, in which the ratio (molar ratio) of Ca to the sum of Ba and Ca is from 0.2 to 0.8; M²⁰ represents at least one element selected from the group consisting of a monovalent, trivalent and pentavalent elements; M³⁰ is Si; Z⁰ is at least one element selected

from the group consisting of a minus monovalent and minus divalent elements, H and N; and a_0 is a number satisfying $0.02 < a_0 \leq 0.5$, b_0 is a number satisfying $0 < b_0 \leq 0.7$, c_0 and d_0 are numbers satisfying $0 \leq d_0/(c_0+d_0) \leq 0.1$, a_0 , b_0 , c_0 and d_0 are numbers satisfying $1.9 \leq (a_0+b_0+c_0+d_0) \leq 2.2$, and e_0 and f_0 are numbers satisfying $0 \leq f_0/(e_0+f_0) \leq 0.01$ and $3.6 \leq (e_0+f_0) \leq 4.4$.

Claim 3 (Previously Presented): The phosphor according to claim 1 comprising a crystal phase having a chemical composition of said formula [2], wherein M^{11} represents at least one element selected from the group consisting of a monovalent element, a divalent element except Eu, Mn and Mg, a trivalent element and a pentavalent element, in which at least one element selected from the group consisting of Ba, Ca and Sr is contained in an amount of 85mol% or more, and the ratio (molar ratio) of Ca to the sum of Ba and Ca is from 0.2 to 0.8; M^{21} is Si; Z^1 is at least one element selected from the group consisting of a minus monovalent and minus divalent elements, H and N; and a_1 is a number satisfying $0.01 < a_1 \leq 0.5$, b_1 is a number satisfying $0 < b_1 \leq 0.7$, c_1 and d_1 are numbers satisfying $0 \leq d_1/(c_1+d_1) \leq 0.2$, a_1 , b_1 , c_1 and d_1 are numbers satisfying $1.9 \leq (a_1+b_1+c_1+d_1) \leq 2.1$, and e_1 and f_1 are numbers satisfying $0 \leq f_1/(e_1+f_1) \leq 0.01$ and $3.8 \leq (e_1+f_1) \leq 4.2$.

Claim 4 (Currently Amended): The phosphor according to claim 1 comprising a crystal phase having a chemical composition of said formula [3], wherein M^{12} represents at least one element selected from the group consisting of a monovalent element, a divalent element except Eu, Mn and Mg, a trivalent element and a pentavalent element, in which the proportion of the divalent element is 80 mol% or more, the proportion of the sum of Ba, Ca and Sr is 40mol% or more, and the ratio (molar ratio) of Ca to the sum of Ba and Ca is less

than 0.2; M^{22} represents a group of tetravalent elements containing Si and Ge in a total amount of 90 mol% or more; Z^2 is at least one element selected from the group consisting of a minus monovalent and minus divalent elements, H and N; and a_2 is a number satisfying $0.01 < a_2 \leq 0.5$, b_2 is a number satisfying $0 < b_2 \leq 0.8$, c_2 and d_2 are numbers satisfying $0 < c_2/(c_2+d_2) \leq 0.2$ or $0.3 \leq c_2/(c_2+d_2) \leq 0.7$, a_2 , b_2 , c_2 and d_2 are numbers satisfying $1.9 \leq (a_2+b_2+c_2+d_2) \leq 2.1$, and e_2 and f_2 are numbers satisfying $0 \leq f_2/(e_2+f_2) \leq 0.01$ and $3.83.6 \leq (e_2+f_2) \leq 4.24.4$.

Claim 5 (Currently Amended): The phosphor according to claim 1, wherein the phosphor comprises a specified crystal phase obtained from X-ray diffraction measurement, wherein the crystal phase satisfies the following conditions:

(Conditions)

In X-ray diffraction measurement using a $\text{CuK}\alpha$ as an X-ray source, a diffraction peak is observed within the range (R_0) of the diffraction angle (2θ) of from 21.30° to 22.50° , and when this diffraction peak is taken as a reference diffraction peak (P_0) and 5 diffraction angle ranges derived from the Bragg angle (θ_s) of P_0 are taken as R_1 , R_2 , R_3 , R_4 and R_5 , wherein

$R_1: 2 \times \arcsin\{\sin(\theta_0)/(0.720 \times 1.015)\}$ to $2 \times \arcsin\{\sin(\theta_0)/(0.720 \times 0.985)\}$,

$R_2: 2 \times \arcsin\{\sin(\theta_0)/(0.698 \times 1.015)\}$ to $2 \times \arcsin\{\sin(\theta_0)/(0.698 \times 0.985)\}$,

$R_3: 2 \times \arcsin\{\sin(\theta_0)/(0.592 \times 1.015)\}$ to $2 \times \arcsin\{\sin(\theta_0)/(0.592 \times 0.985)\}$,

$R_4: 2 \times \arcsin\{\sin(\theta_0)/(0.572 \times 1.015)\}$ to $2 \times \arcsin\{\sin(\theta_0)/(0.572 \times 0.985)\}$, and

$R_5: 2 \times \arcsin\{\sin(\theta_0)/(0.500 \times 1.015)\}$ to $2 \times \arcsin\{\sin(\theta_0)/(0.500 \times 0.985)\}$,

at least one diffraction peak exists in these 5 ranges, with the proviso that P_0 has an intensity of 20% or more by the diffraction peak height ratio, based on the strongest diffraction peak of said 6 or more crystal phase-derived diffraction peaks, and the other peaks has an intensity of

9% or more by the diffraction peak height ratio, wherein when two or more diffraction peaks exist in one angle range, a peak higher in intensity is selected.

$$R1: 2 \times \arcsin\{\sin(\theta_0)/(0.720 \times 1.015)\} \text{ to } 2 \times \arcsin\{\sin(\theta_0)/(0.720 \times 0.985)\}$$

$$R2: 2 \times \arcsin\{\sin(\theta_0)/(0.698 \times 1.015)\} \text{ to } 2 \times \arcsin\{\sin(\theta_0)/(0.698 \times 0.985)\}$$

$$R3: 2 \times \arcsin\{\sin(\theta_0)/(0.592 \times 1.015)\} \text{ to } 2 \times \arcsin\{\sin(\theta_0)/(0.592 \times 0.985)\}$$

$$R4: 2 \times \arcsin\{\sin(\theta_0)/(0.572 \times 1.015)\} \text{ to } 2 \times \arcsin\{\sin(\theta_0)/(0.572 \times 0.985)\}$$

$$R5: 2 \times \arcsin\{\sin(\theta_0)/(0.500 \times 1.015)\} \text{ to } 2 \times \arcsin\{\sin(\theta_0)/(0.500 \times 0.985)\}$$

Claim 6 (Currently Amended): The phosphor according to claim 1, wherein said crystal phase satisfies the following conditions:

(Conditions)

In X-ray diffraction measurement using a $\text{CuK}\alpha$ as an X-ray source, a diffraction peak is observed within the range (R0) of the diffraction angle (2θ) from 21.30° to 22.50° , and when this diffraction peak is taken as a reference diffraction peak (P0) and 5 diffraction angle ranges derived from the Bragg angle (θ_s) of P0 are taken as R1, R2, R3, R4 and R5, wherein

$$R1: 2 \times \arcsin\{\sin(\theta_0)/(0.720 \times 1.010)\} \text{ to } 2 \times \arcsin\{\sin(\theta_0)/(0.720 \times 0.990)\},$$

$$R2: 2 \times \arcsin\{\sin(\theta_0)/(0.698 \times 1.010)\} \text{ to } 2 \times \arcsin\{\sin(\theta_0)/(0.698 \times 0.990)\},$$

$$R3: 2 \times \arcsin\{\sin(\theta_0)/(0.592 \times 1.010)\} \text{ to } 2 \times \arcsin\{\sin(\theta_0)/(0.592 \times 0.990)\},$$

$$R4: 2 \times \arcsin\{\sin(\theta_0)/(0.572 \times 1.010)\} \text{ to } 2 \times \arcsin\{\sin(\theta_0)/(0.572 \times 0.990)\}, \text{ and}$$

$$R5: 2 \times \arcsin\{\sin(\theta_0)/(0.500 \times 1.010)\} \text{ to } 2 \times \arcsin\{\sin(\theta_0)/(0.500 \times 0.990)\},$$

at least one diffraction peak exists in these 5 ranges, with the proviso that P0 has an intensity of 20% or more by the diffraction peak height ratio, based on the strongest diffraction peak of 6 or more crystal phase-derived diffraction peaks, and the other peaks has an intensity of 9%

or more by the diffraction peak height ratio, wherein when two or more diffraction peaks exist in one angle range, a peak higher in intensity is selected.

$$R1: 2 \times \arcsin\{\sin(\theta_0)/(0.720 \times 1.010)\} \text{ to } 2 \times \arcsin\{\sin(\theta_0)/(0.720 \times 0.990)\}$$

$$R2: 2 \times \arcsin\{\sin(\theta_0)/(0.698 \times 1.010)\} \text{ to } 2 \times \arcsin\{\sin(\theta_0)/(0.698 \times 0.990)\}$$

$$R3: 2 \times \arcsin\{\sin(\theta_0)/(0.592 \times 1.010)\} \text{ to } 2 \times \arcsin\{\sin(\theta_0)/(0.592 \times 0.990)\}$$

$$R4: 2 \times \arcsin\{\sin(\theta_0)/(0.572 \times 1.010)\} \text{ to } 2 \times \arcsin\{\sin(\theta_0)/(0.572 \times 0.990)\}$$

$$R5: 2 \times \arcsin\{\sin(\theta_0)/(0.500 \times 1.010)\} \text{ to } 2 \times \arcsin\{\sin(\theta_0)/(0.500 \times 0.990)\}$$

Claim 7 (Currently Amended): A phosphor comprising a crystal phase of an alkali earth silicate containing at least one element selected from the group consisting of Ba, Sr, Ca and Mg, wherein said crystal phase is a crystal phase satisfying the following conditions:

~~(Conditions)~~

In X-ray diffraction measurement using a $\text{CuK}\alpha$ as an X-ray source, a diffraction peak is observed within the range (R0) of the diffraction angle (2θ) from 21.30° to 22.50° , and when this diffraction peak is taken as a reference diffraction peak (P0) and 5 diffraction angle ranges derived from the Bragg angle (θ s) of P0 are taken as R1, R2, R3, R4 and R5, wherein

$$R1: 2 \times \arcsin\{\sin(\theta_0)/(0.720 \times 1.010)\} \text{ to } 2 \times \arcsin\{\sin(\theta_0)/(0.720 \times 0.990)\},$$

$$R2: 2 \times \arcsin\{\sin(\theta_0)/(0.698 \times 1.010)\} \text{ to } 2 \times \arcsin\{\sin(\theta_0)/(0.698 \times 0.990)\},$$

$$R3: 2 \times \arcsin\{\sin(\theta_0)/(0.592 \times 1.010)\} \text{ to } 2 \times \arcsin\{\sin(\theta_0)/(0.592 \times 0.990)\},$$

$$R4: 2 \times \arcsin\{\sin(\theta_0)/(0.572 \times 1.010)\} \text{ to } 2 \times \arcsin\{\sin(\theta_0)/(0.572 \times 0.990)\}, \text{ and}$$

$$R5: 2 \times \arcsin\{\sin(\theta_0)/(0.500 \times 1.010)\} \text{ to } 2 \times \arcsin\{\sin(\theta_0)/(0.500 \times 0.990)\},$$

at least one diffraction peak exists in these 5 ranges, with the proviso that P0 has an intensity of 20% or more by the diffraction peak height ratio, based on the strongest diffraction peak of said 6 or more crystal phase-derived diffraction peaks, and the other peaks has an intensity of

9% or more by the diffraction peak height ratio, wherein when two or more diffraction peaks exist in one angle range, a peak higher in intensity is selected.

$$R1: 2 \times \arcsin\{\sin(\theta_0)/(0.720 \times 1.010)\} \text{ to } 2 \times \arcsin\{\sin(\theta_0)/(0.720 \times 0.990)\}$$

$$R2: 2 \times \arcsin\{\sin(\theta_0)/(0.698 \times 1.010)\} \text{ to } 2 \times \arcsin\{\sin(\theta_0)/(0.698 \times 0.990)\}$$

$$R3: 2 \times \arcsin\{\sin(\theta_0)/(0.592 \times 1.010)\} \text{ to } 2 \times \arcsin\{\sin(\theta_0)/(0.592 \times 0.990)\}$$

$$R4: 2 \times \arcsin\{\sin(\theta_0)/(0.572 \times 1.010)\} \text{ to } 2 \times \arcsin\{\sin(\theta_0)/(0.572 \times 0.990)\}$$

$$R5: 2 \times \arcsin\{\sin(\theta_0)/(0.500 \times 1.010)\} \text{ to } 2 \times \arcsin\{\sin(\theta_0)/(0.500 \times 0.990)\}$$

Claim 8 (Previously Presented): A light emitting device comprising a first light emitter which emits light of 350 nm to 430 nm and a second light emitter which emits visible light by irradiation of light from the first light emitter, wherein the second light emitter contains the phosphor according to claim 1.

Claim 9 (Original): The light emitting device according to claim 8, wherein the first light emitter is a laser diode or a light emitting diode.

Claim 10 (Previously Presented): A lighting system comprising the light emitting device according to claim 8.

Claim 11 (Previously Presented): An image display unit comprising the light emitting device according to claim 8.

Claim 12 (Previously Presented): The phosphor according to claim 1, which emits white light.

Claim 13 (Previously Presented): The phosphor according to claim 1, which emits red light.

Claim 14 (Previously Presented): A method of producing the phosphor according to Claim 1, which comprises preparing a mixture of sources and burning the mixture by heat treatment under a heating atmosphere, wherein the heating atmosphere is a reducing atmosphere.

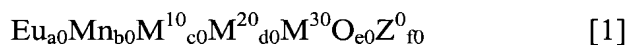
Claim 15 (Previously Presented): A phosphor-containing resin wherein the phosphor according to Claim 1 is dispersed in a resin.

Claim 16 (Previously Presented): The light emitting device according to Claim 8, which uses a GaNbased compound semiconductor as the first light emitter.

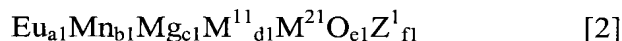
Claim 17 (Previously Presented): The light emitting device according to Claim 8, which emits white light.

Claim 18 (Previously Presented): The light emitting device according to Claim 8, which emits red light.

Claim 19 (New): The phosphor according to claim 1, comprising a crystal phase having any one chemical composition of the following formulas [1] or [2]:

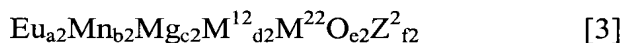


wherein M^{10} is a divalent element containing 85 mol% or more of at least one element selected from the group consisting of Ba, Ca and Sr, in which the ratio (molar ratio) of Ca to the sum of Ba and Ca is from 0.1 to 0.9; M^{20} represents at least one element selected from the group consisting of a monovalent, trivalent and pentavalent elements; M^{30} represents a group of tetravalent elements containing Si and Ge in a total amount of 90 mol% or more; Z^0 is at least one element selected from the group consisting of a minus monovalent and minus divalent elements, H and N; and a_0 is a number satisfying $0.001 \leq a_0 \leq 0.6$, b_0 is a number satisfying $0 < b_0 \leq 0.7$, c_0 and d_0 are numbers satisfying $0 \leq d_0/(c_0+d_0) \leq 0.2$, a_0 , b_0 , c_0 and d_0 are numbers satisfying $1.8 \leq (a_0+b_0+c_0+d_0) \leq 2.2$, and e_0 and f_0 are numbers satisfying $0 \leq f_0/(e_0+f_0) \leq 0.035$ and $3.6 \leq (e_0+f_0) \leq 4.4$:



wherein M^{11} represents at least one element selected from the group consisting of a monovalent element, a divalent element except Eu, Mn and Mg, a trivalent element and a pentavalent element, in which the proportion of the divalent element is 80 mol% or more, the proportion of the sum of Ba, Ca and Sr is 40mol% or more, and the ratio (molar ratio) of Ca to the sum of Ba and Ca is from 0.2 to 0.9; M^{21} represents a group of tetravalent elements containing Si and Ge in a total amount of 90 mol% or more; Z^1 is at least one element selected from the group consisting of a minus monovalent and minus divalent elements, H and N; and a_1 is a number satisfying $0.001 \leq a_1 \leq 0.8$, b_1 is a number satisfying $0 < b_1 \leq 0.8$, c_1 and d_1 are numbers satisfying $0 < c_1/(c_1+d_1) \leq 0.2$, a_1 , b_1 , c_1 and d_1 are numbers satisfying $1.8 \leq (a_1+b_1+c_1+d_1) \leq 2.2$, and e_1 and f_1 are numbers satisfying $0 \leq f_1/(e_1+f_1) \leq 0.035$ and $3.6 \leq (e_1+f_1) \leq 4.4$.

Claim 20 (New): The phosphor according to claim 1, comprising a crystal phase having a chemical composition of the following formula [3]:



wherein M^{12} represents at least one element selected from the group consisting of a monovalent element, a divalent element except Eu, Mn and Mg, a trivalent element and a pentavalent element, in which the proportion of the divalent element is 80 mol% or more, the proportion of the sum of Ba, Ca and Sr is 40mol% or more, and the ratio (molar ratio) of Ca to the sum of Ba and Ca is less than 0.2; M^{22} represents a group of tetravalent elements containing Si and Ge in a total amount of 90 mol% or more; Z^2 is at least one element selected from the group consisting of a minus monovalent and minus divalent elements, H and N; and a_2 is a number satisfying $0.0003 \leq a_2 \leq 0.8$, b_2 is a number satisfying $0 < b_2 \leq 0.8$, c_2 and d_2 are numbers satisfying $0 < c_2/(c_2+d_2) \leq 0.2$ or $0.3 \leq c_2/(c_2+d_2) \leq 0.8$, a_2 , b_2 , c_2 and d_2 are numbers satisfying $1.8 \leq (a_2+b_2+c_2+d_2) \leq 2.2$, and e_2 and f_2 are numbers satisfying $0 \leq f_2/(e_2+f_2) \leq 0.035$ and $3.6 \leq (e_2+f_2) \leq 4.4$, wherein the phosphor emits white light.

Claim 21 (New): The phosphor according to claim 2, wherein $0 < b_0 \leq 0.2$ and the phosphor emits white light.

Claim 22 (New): The phosphor according to claim 2, wherein $0.05 < b_0 \leq 0.7$ and the phosphor emits red light.

Claim 23 (New): The phosphor according to claim 3, wherein $0 < b_1 \leq 0.15$ and the phosphor emits white light.

Claim 24 (New): The phosphor according to claim 3, wherein $0.03 < b_1 \leq 0.8$ and the phosphor emits red light.

Claim 25 (New): The phosphor according to claim 4, wherein $0.002 < b_2 \leq 0.6$.

Claim 26 (New): The phosphor according to claim 4, wherein $0 < c_2 / (c_2 + d_2) \leq 0.2$.

Claim 27 (New): The phosphor according to claim 4, wherein $0.3 \leq c_2 / (c_2 + d_2) \leq 0.8$.